DICYLOPENTADIENE CAS No 77-73-6	MATERIAL SAFETY DATA SHEET SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Dicylopentadiene

CAS-No. : 77-73-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
Ansari Road Daryaganj
New Delhi-110002
INDIA

Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 3), H226
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 2), H330
Skin irritation (Category 2), H315
Eye irritation (Category 2), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word Danger

Hazard statement(s)	
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
Precautionary statement(s)	
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P284	Wear respiratory protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
Supplemental Hazard Statements	none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	:	4,7-Methano-3a,4,7,7a-tetrahydroindene Cyclopentadiene dimer
Formula	:	$C_{10}H_{12}$
Molecular weight	:	132.20 g/mol
CAS-No.	:	77-73-6
EC-No.	:	201-052-9
Index-No.	:	601-044-00-9

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
3a,4, ,7a-Tetrahydro-4,7- ethanoindene			
CAS-No.	77-73-6	Flam. Liq. 3; Acute Tox. 4; Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3; Aquatic Chronic 2; H226, H302, H330, H315, H319, H335, H411	<= 100 %
EC-No.	201-052-9		
Index-No.	601-044-00-9		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: light yellow
b)	Odour	pungent
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing Point	Melting point/range: < 4 °C
f)	Initial boiling point and boiling range	140 °C
g)	Flash point	24 °C
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 10 %(V) Lower explosion limit: 1 %(V)
k)	Vapour pressure	4 - 30 mmHg at 23.3 °C

l)	Vapour density	No data available
m)	Relative density	0.983 g/cm3 at 20 °C
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	log Pow: 2.78 at 25 °C
p)	Auto-ignition temperature	503 °C
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension 0.03 mN/m at 37.8 °C

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
(0.05 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents, Strong acids, Strong bases

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 590 mg/kg(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
(OECD Test Guideline 401)
LC50 Inhalation - Rat - 4 h - 1.88 mg/l(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - 4,460 mg/kg(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
(OECD Test Guideline 402)
LD50 Intraperitoneal - Rat - 200 mg/kg(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

Skin corrosion/irritation
Skin - Rabbit(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Result: irritating - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Result: Irritating to eyes.
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Draize Test - Guinea pig(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Does not cause skin sensitisation.

Germ cell mutagenicity
Hamster(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Lungs
Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

Additional Information

Repeated dose toxicity - Rat - male and female - inhalation (vapour)(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	static test LC50 - Lepomis macrochirus (Bluegill) - 23.3 mg/l - 96 h(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia pulex (Water flea) - 4.2 mg/l - 48 h(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Toxicity to algae	static test EC50 - Selenastrum capricornutum (green algae) - > 100 mg/l - 96 h(3a,4,7,7a-Tetrahydro-4,7-methanoindene)
Toxicity to bacteria	IC50 - Protozoa - 5.3 mg/l - 24 h(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

12.2 Persistence and degradability

Biodegradability	Biotic/Aerobic - Exposure time 21 d(3a,4,7,7a-Tetrahydro-4,7-methanoindene) Result: 1.6 % - Not readily biodegradable.
Ratio BOD/ThBOD	<= 4 %(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

12.3 Bioaccumulative potential

Bioaccumulation — Lepomis macrochirus (Bluegill) - 14 d
- 1 mg/l(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

Bioconcentration factor (BCF): 53
(OECD Test Guideline 305)

12.4 Mobility in soil

No data available(3a,4,7,7a-Tetrahydro-4,7-methanoindene)

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Toxic to aquatic life with long lasting effects.

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 2048 IMDG: 2048 IATA: 2048

14.2 UN proper shipping name

ADR/RID: DICYCLOPENTADIENE
IMDG: DICYCLOPENTADIENE
IATA: Dicyclopentadiene

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.